

Amendments to the Claims

Please amend Claims 1, 8, 10, 19, 20, 26, 32, 33, 39 and 40. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently Amended) A system for reducing bandwidth consumed by gathering statistical data via a half-duplex communication bus, comprising:
 - a system controller gathering statistical data via a half-duplex communication bus;
 - at least one element in the system also on the half-duplex communication bus,said element:
 - (i) in a controlled manner, automatically pre-gathering the statistical data in an information buffer in the element; and
 - (ii) reporting a subset of the statistical data in the buffer to the system controller in response to being polled for the statistical data or for a reason other than for the statistical data; and
 - the automatic pre-gathering and subsequent reporting of statistical data reducing the number of communications and data transfer cycles required to transfer the statistical data from the element to the system controller resulting in a reduction of bandwidth consumed by gathering the statistical data from the element via the half-duplex communication bus; and
 - the system controller determining if the statistical data is up-to-date and accessing the at least one element for the statistical data only if the age of the statistical data in the controller is older than a predefined threshold indicating that the statistical data was not timely sent in place of a null response by the at least one element.
2. (Previously presented) The system according to Claim 1 wherein the buffer is organized in a queue and the statistical data is reported after the statistical data has reached the head of the queue.

3. (Original) The system according to Claim 1 wherein the element is a line card having at least one processor monitoring at least one communication port.
4. (Original) The system according to Claim 1 wherein the system reports the gathered statistical data to a central statistical data gathering system.
5. (Original) The system according to Claim 1 wherein:
the statistical data includes information about an element communication port;
and
the buffer stores only one instance of information about a communication port at any given time.
6. (Original) The system according to Claim 1 wherein the element makes statistical data regarding respective ports available at least as often as the system controller requires the statistical data.
7. (Original) The system according to Claim 1 wherein the element makes the statistical data available at least one time per second.
8. (Currently Amended) The system according to Claim 1 wherein the element ~~makes~~ pregathers the statistical data available as often as necessary but not so often that the buffer is congested by the statistical data.
9. (Original) The system according to Claim 1 wherein the element reports statistical data in place of reporting a null response.
10. (Currently Amended) A method for reducing bandwidth consumed by gathering statistical data on a half-duplex communication bus, comprising:

gathering statistical data from at least one element in a multiprocessor system employing the half-duplex bus;

automatically pre-gathering the statistical data in an information buffer in a controlled manner by the at least one element in the multiprocessor system; and

reporting the statistical data from the buffer to a system controller in response to being polled for the statistical data or for a reason other than for the statistical data;

the automatic pre-gathering and subsequent reporting reducing the number of communications and data transfer cycles required to transfer the statistical data from the element to the system controller resulting in a reduction of bandwidth consumed by gathering the statistical data about the elements via the half-duplex communication bus; and

determining if the statistical data in the system controller is up-to-date and accessing the at least one element for the statistical data only if the age of the statistical data in the system controller was not timely sent in place of a null response by the at least one element.

11. (Previously presented) The method according to Claim 10 wherein the element further comprises:
 - organizing the data in the buffer in a queue; and
 - reporting the statistical data after the statistical data has reached the head of the queue.
12. (Original) The method according to Claim 10 wherein the element is a line card having at least one processor monitoring at least one communication port in the line card.
13. (Original) The method according to Claim 10 further comprising reporting to a central statistical data gathering system the statistical data gathered from the elements.
14. (Original) The method according to Claim 10 wherein:
 - the statistical data refers to an element communication port; and

the buffer stores only one instance about an element communication port at any given time.

15. (Previously Presented) The method according to Claim 10 wherein automatically pre-gathering statistical data is performed at least as often as the statistical data is gathered by the system controller.
16. (Previously Presented) The method according to Claim 10 wherein automatically pre-gathering statistical data is performed at least one time per second.
17. (Previously Presented) The method according to Claim 10 wherein automatically pre-gathering statistical data is performed as often as necessary but not so often that the buffer is congested by the statistical data.
18. (Original) The method according to Claim 10 wherein reporting the statistical data is performed in place of reporting a null response.
19. (Currently Amended) A system for reducing the bandwidth consumed by gathering statistical data via a half-duplex communication bus, comprising:
 - means for gathering statistical data from at least one element in the system employing a half-duplex communication bus;
 - means for automatically pre-gathering the statistical data, in a controlled manner, in a buffer associated with the means for automatically pre-gathering statistical data; and
 - means for reporting the statistical data to said means for gathering the statistical data in response to being polled for the statistical data or for a reason other than for the statistical data and the statistical data is selected to be reported;
 - said means for automatically pre-gathering and said means for reporting reducing the number of communications and data transfer cycles required to transfer the statistical data from the element to the means for gathering the statistical data resulting in a

reduction of bandwidth consumed by gathering the statistical data about the elements via the half-duplex communication bus; and

said means for gathering the statistical data including means for determining if the statistical data in the system controller is up-to-date and means for accessing the at least one element for statistical data only if the age of the statistical data in the system controller was not timely sent in place of a null response by the at least one element.

20. (Currently Amended) An apparatus for reducing the bandwidth consumed by gathering statistical data on a half-duplex communication bus, comprising:

at least one communication port having high-speed communication capabilities with external devices;

a processor coupled to the communication port, the processor maintaining statistical data about the communication port;

a buffer coupled to the processor, the processor automatically pre-gathering in the buffer, in a controlled manner, the statistical data; and

an interface transmitting the statistical data to the system controller in response to being polled for the statistical data or for a reason other than for the statistical data and the statistical data is selected to be reported; and

the processor adapted to respond to a request for the statistical data from the system controller, the request received from the system controller only if the statistical data was not timely sent to the system controller in place of a null response by the processor.

21. (Original) The apparatus according to Claim 20 wherein the statistical data in the buffer is organized in a queue.
22. (Original) The apparatus according to Claim 20 wherein the processor limits the statistical data in the buffer to one entry per port at any given time.

23. (Previously presented) The apparatus according to Claim 20 wherein the processor s pre-gathers statistical data associated with a port at at least the rate of being requested by the system controller.
24. (Previously Presented) The apparatus according to Claim 20 wherein the processor pre-gathers data about a port as often as necessary but not so often that the buffer is congested by the statistical data.
25. (Original) The apparatus according to Claim 20 wherein the statistical data is reported in place of reporting a null.
26. (Currently Amended) In a line card having at least one communication port, a method for reducing the bandwidth consumed by gathering statistical data on a half-duplex communication bus, comprising:
 - maintaining statistical data about at least one communication port;
 - automatically pre-gathering the statistical data in a buffer;
 - transmitting the statistical data to a system controller in response to being polled for the statistical data or for a reason other than for the statistical data and the statistical data is selected to be reported; and
 - responding to a request from the system controller for the statistical data, the request received from the system controller only if the statistical data was not timely sent to the system controller in place of a null response by the processor.
27. (Original) The method according to Claim 26 wherein the statistical data in the buffer is organized in a queue.
28. (Previously Presented) The method according to Claim 26 wherein pre-gathering the statistical data in the buffer limits the number of entries per port in the buffer.

29. (Previously presented) The method according to Claim 26 wherein pre-gathering the statistical data in the buffer occurs at at least the rate of requests for data about an individual port.
30. (Previously Presented) The method according to Claim 26 wherein pre-gathering the statistical data in the buffer occurs as often as necessary but not so often that the buffer is congested by the statistical data.
31. (Original) The method according to Claim 26 wherein transmitting the statistical data occurs in place of transmitting a null response message.
32. (Currently Amended) An apparatus for reducing the bandwidth consumed by gathering statistical data on a half-duplex communication bus, comprising:
means for supporting high-speed communications with external devices;
means for pre-gathering statistical data about the means for supporting high-speed communications;
means for automatically reporting the statistical data to a requesting device in response to being polled for the statistical data or for a reason other than for the statistical data and the statistical data is selected to be reported; and
said means for automatically reporting the statistical data adapted to respond to a request for the statistical data from the system controller, the request received from the system controller only if the statistical data was not timely sent to the system controller by the processor in place of a null response.
33. (Currently Amended) A computer program product, comprising:
a computer usable medium for storing data;
a set of computer program instructions embodied on the computer usable medium, including instructions to:
maintain statistical data about at least one communication port;
automatically pre-gather the statistical data in a buffer;

transmit the statistical data to a system controller in response to being polled for the statistical data or for a reason other than for the statistical data and the statistical data is selected to be reported.; and

respond to a request from the system controller for the statistical data, the request received from system controller only if the the statistical data was not timely sent to the system controller in place of a null response by the processor.

34. (Original) The computer program product according to Claim 33 wherein the instructions further include instructions to organize the statistical data in the buffer in a queue.
35. (Original) The computer program product according to Claim 33 wherein the instructions further include instructions to limit the statistical data in the buffer.
36. (Previously presented) The computer program product according to Claim 33 wherein the instructions further include instructions to pregather the statistical data available at at least the rate of being requested by the system controller.
37. (Original) The computer program product according to Claim 33 wherein the instructions further include instructions to make the statistical data available in the buffer as often as necessary but not so often that the buffer is congested by the statistical data.
38. (Original) The computer program product according to Claim 33 wherein the instructions further include instructions to report a subset of the statistical data in place of reporting a null.
39. (Currently Amended) A system for reducing bandwidth consumed by gathering data via a communication bus, comprising:
 - a system controller gathering data on a communication bus;
 - at least one element in the system also on the communication bus, said element:
 - (i) automatically pre-gathering the data in a buffer; [[and]]

(ii) reporting a subset of the data in the buffer to the system controller in response to being polled for the statistical data or for a reason other than for the statistical data; and

(iii) responding to a request for the statistical data from the system controller, the request received from the system controller only if the statistical data was not timely sent to the system controller in place of a null response by the processor.

40. (Currently Amended) A method for reducing bandwidth consumed by gathering data via a communication bus, comprising:

automatically pre-gathering substantive data in a buffer;

in response to being polled for the statistical data or for a reason other than for the substantive data, reporting the substantive data from the buffer instead of non-substantive data; and

responding to a request from a system controller for the statistical data, the request received from the system controller only if the statistical data was not timely sent to the system controller in place of a null response by the processor.